



# UNITED STATES PATENT AND TRADEMARK OFFICE

W  
UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/048,128	05/22/2002	Andrew D. Hirzel		2838
20915	7590	03/23/2005	EXAMINER	
MCGARRY BAIR PC 171 MONROE AVENUE, N.W. SUITE 600 GRAND RAPIDS, MI 49503				JONES, JUDSON
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/048,128	HIRZEL, ANDREW D.
	<b>Examiner</b>	<b>Art Unit</b>
	Judson H. Jones	2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 16 February 2005.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 1,3-6,8-11,14-17 and 20-28 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) 20-28 is/are allowed.

6)  Claim(s) 1,3,4,6 and 8-11 is/are rejected.

7)  Claim(s) 5 and 14-17 is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 07 January 2002 is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_\_

## **DETAILED ACTION**

Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 3, 4 and 8-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Gruber 5,729,617. Gruber discloses a voice coil actuator with a coil, an armature and a magnet 12 with the housing 15 and magnet 12 both being tapered as shown in figure 1. As explained in column 1 lines 4-6, the Gruber device is intended for use as a loudspeaker. For accurate sound reproduction, the displacement of the armature is made to be substantially linearly proportional to electric current flowing through the coil.

In regard to claim 4, see Gruber column 1 lines 62-66 where the coil is described as being movable.

In regard to claims 8-11, see Gruber figure 1.

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gruber in view of Geisenberger 5,647,014. Gruber discloses the voice coil actuator with the coil, armature, magnet and housing but does not state that the coil is a single winding. Geisenberger is another voice coil actuator used as a loudspeaker and is assigned to Nokia Technology, as is the Gruber patent.

Geisenberger shows a single coil winding in figure 1 and teaches how to make such a winding in column 2 lines 30-40. Since Gruber provides no details on the coil and since Geisenberger and Gruber are from the same field of endeavor, were invented within a year of each other and are assigned to the same company, it would have been obvious at the time the invention was made for one of ordinary skill in the art to have made the coil as a single winding.

*Allowable Subject Matter*

Claims 20-28 are allowed.

Claims 5 and 14-17 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not disclose or teach a magnet carried by the armature in combination with the other features of claim 5. The prior art of record does not disclose or teach an arcuately tapered coil in combination with the other features of claim 14. The prior art of record does not disclose or teach a discontinuously tapered coil in combination with the other features of claim 16. The prior art of record does not disclose or teach a magnet that is arcuately tapered in combination with the other features of claim 16. The prior art of record does not disclose or teach a magnet that is discontinuously tapered in combination with the other features of claim 17. The prior art of record does not disclose or teach one of a magnet or coil being parabolically tapered in combination with the other features of claim 20.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Parker 3,917,914 teaches making the magnet on a voice coil motor movable and the

coil fixed. Combining Parker with Gruber would produce a device similar to that being claimed in applicant's claim 5. However, no motivation has been found for such a combination.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Judson H. Jones whose telephone number is 571-272-2025. The examiner can normally be reached on 8-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
JJJ 3/9/2005

  
THANH LAM  
PRIMARY EXAMINER